

Group Exams in the Higher Education Classroom: Strategies and Support for Successful Implementation



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Abstract

Group exams have been proposed as a means to improve student learning and provide balanced assessment in the higher education classroom. Group exams are an assessment procedure that requires small groups of students to work together to answer exam questions. Grades can be assigned at the group or individual level depending on the goals of the instructor. This paper provides an overview of the benefits of implementing group exams in the higher education classroom, describes how four individual instructors implemented group exams within their classrooms to achieve specific pedagogical goals, and discusses student evaluations of the group exam process in light of these goals. Student evaluations of the group exam process revealed several perceived benefits of the group exam when compared to other exam experiences. Student reported benefits included increased exam preparation, reduced anxiety, learning from and collaboration with others, exposure to new ideas, retention of knowledge and critical thinking. Instructors in agriculture and related disciplines may wish to consider the use of group exams as part of a balanced classroom assessment process.

Introduction

Group exams have been proposed as a means to improve a range of student and classroom outcomes including student exam performance, learning, and retention (Cortright et al., 2003; Jensen, Johnson et al., 2002; Rao et al., 2002; Zimbardo et al., 2003). Group exams are part of a broader family of collaborative learning strategies. Such strategies focus on the learning process as opposed to the testing process (Jensen, Moore et al., 2002). Group exams provide a

mechanism for assessing class content, while at the same time, providing an opportunity for the development of group process skills (Graham and Graham, 1997; Rao et al., 2002). Group exams are one tool that instructors can use as a means of providing a range of classroom assessments and accommodating multiple learning styles.

Group exams can take a range of forms within the classroom. For example, they can be used as the primary or sole assessment in a course; they can be part of an individual exam, or serve as a “follow up” on an individual exam (Hodges, 2004). They can be used effectively in laboratories as well as in the classroom (Hodges, 2004). Exams can be written using multiple choice questions, open ended answers, true-false, and problems. Groups can be self or instructor selected and can be graded at the individual or group level (Ewald, 2005; Jensen, Moore et al., 2002;). Arguably, in order to be truly cooperative, group exams should be graded at the group level because positive interdependence will promote encouragement and assistance among group members (Jensen, Johnson et al., 2002).

Support for the role of group exams in facilitating key learning goals within the college classroom is provided by several related theories and taxonomies. Bloom's Taxonomy (1956) and other models of student learning (Quoss et al., 2000), describe student learning and knowledge gain as occurring in stages. If one of the goals in the college classroom is to move from one stage to the next, professors must develop strategies to assist with this process. Vygotsky's theory of the zone of proximal development (1978) supports the notion that learners can move from one level of thinking to the next with the assistance of competent others such as peers providing a “scaffold” to support movement to higher levels

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of learning. Collaborative processes, such as group exams, allow for such peer interactions to occur.

This paper utilizes case studies from four different classes to demonstrate the role of group exams as a learning and assessment tool. Examples are provided from three disciplines (child development, family studies, and textiles and merchandising) within Family and Consumer Sciences and Human Development and Family Studies. Student evaluations of the group exam process are presented to illustrate the role of group exams in increasing student learning; promoting social learning and group process skills; and providing a balanced assessment process and accommodating of multiple learning styles.

Why Group Exams: Goals for Student Learning

Group exams may be used in the classroom for a variety of reasons. We chose to use group exams as an assessment strategy for three reasons. First, we are interested in assessment strategies that promote student learning. Second, we believe group exams promote social learning and the development of group process skills. Third, we are interested in providing a classroom assessment process that is balanced and accommodates multiple learning styles.

Increased Student Learning

Group exams provide an assessment strategy that focuses on the learning and application of course materials. Students gain greater knowledge and retention through the process of discussing and debating the test questions (Cortright et al., 2003; Rao et al., 2002). Group exams allow questions to be incorporated at higher levels of thinking, and provide an active learning strategy that can be used with large class sizes. By listening to each other and discussing or debating the “right” answer, students are provided a window into the thought processes of others and are exposed to a variety of learning strategies. This makes for a highly student-directed learning environment and allows for exams to serve as a teaching tool as well as an assessment strategy. The group exam process also reduces the anxiety associated with the typical exam process and allows students to focus on learning and application of course content (Hodges, 2004; Russo and Warren, 1999).

Promotion of Social Learning and Group Process Skills

Group exams can nurture and promote social learning and the group process (Jensen, Johnson et al., 2002). By discussing the exam questions with each other, learning of course content is enriched. Students question, challenge, agree, disagree, and explain the materials to each other as they achieve consensus. This process allows for the integration of social skills training and group interaction skills and

practice. It also allows for exposure to new ideas and ways of thinking. The group exam process allows students to reflect on the major themes and content discussed in class, make application to personal or professional problems, and develop critical thinking skills (Shindler, 2004) as information is discussed and ideas are shared. In essence, group exams allow for a learning community within a classroom environment by allowing all members to be learners and promoting learning at the group level (Baker, 1999).

Balanced Assessment and Accommodation of Multiple Learning Styles

Group exams are one of the assessment strategies used in the classes described in this paper. Other assessments utilized by the authors include laboratory observation reports, in-class small group and individual activities, research papers, reading reflections, worksheets, concept boards, and written assignments. In each case, group exams are weighted to ensure that group exams are seen as important, but not so heavily that a student would pass or fail the course on the group exam grade alone. By providing a range of assessment strategies, students with varied learning styles are accommodated and recognized. In the classrooms described in this study students have multiple ways to show what they know and can do and contribute to a learner-centered assessment style (Huba and Freed, 2000).

Group Exam Implementation Strategies

This section uses individual case studies to illustrate how group exams were used in four Family and Consumer Sciences courses representing three unique disciplines (child development, family studies, and textiles and merchandising). The case studies demonstrate the variety of strategies that can be used to implement group exams, and the range of disciplines group exams that may benefit from using a group exam process.

Case Study 1: Child Development

Course Description: Child Development is a four-credit hour sophomore level course required of students in professional child development, family and community services, elementary education with an early childhood endorsement, communication disorders, and other disciplines. The course examines all of the developmental domains while teaching preliminary observation and research skills. The class includes classroom instruction and laboratory observations at the University Early Care and Education Center.

Implementation: The rules for the group exam were:

Students who had missed two or more classes in each exam period had to take the exam alone.

Students who were not participating in exam question discussions (the instructor continually

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walked around the room) were asked to complete the exam on their own.

Students could take the exam in whatever way fits their learning style: alone or in a group. (Note: it was rare for students to opt out of the group exam)

One exam was handed in per group and all students received the same grade. If a student did not agree with a group answer, the student could write their own, initial it, and that question would be graded separately and their final score adjusted accordingly.

Groups could be two or three person. In this author's experience, larger groups (e.g. groups of four) seem to make it easier for students to disengage and not fully participate in the group process.

Case Study 2: Foundations of Merchandising

Course Description: Foundations of Merchandising is a three-credit hour senior level applied mathematics class in which students are introduced to the concept of financial management in a fashion retail setting. The course presents basic merchandising principles and mathematical formulas used in calculating a variety of components necessary for successful operation of a business. Foundations of Merchandising is a required course for Textiles and Merchandising majors within the department of Family and Consumer Sciences and also attracts students from the departments of Art and Theatre and Dance.

Implementation: Course content focuses on students mastering mathematical concepts through the use of homework problem sets involving the use of written calculations as well as spreadsheet calculations. Students had the option of taking three of the four exams in a group format. The first exam was administered individually. For the last three exams, students were allowed to take exams in a group setting. Groups were allowed to consist of two students for the second and third exams and up to three students for fourth exam. These changes were made based on student comments. Students reported more comfort in groups of three or four because they felt it was less likely their math skills would hinder the grades of others in a group with three or more students. When group exams were offered, students had the option to take the exam individually or in a group. As a group, the students completed and submitted one exam. The exams were scored and students in a group were assigned the same grade.

Case Study 3: Marriage and Intimate Relationships

Course Description: Marriage and Intimate Relationships is a three-credit hour junior level course. The course is required for students in family and community services option within the department of Family and Consumer Sciences and is open to any student on campus who has met the course

prerequisites. The course is taught using lectures and small group discussions. The class covers current research on relationship development and factors affecting satisfaction and stability in intimate relationships and marriage. Course assessment consists of exams, weekly written reflections on course readings, small group participation points, and a final paper.

Implementation: On the first day of class, students are introduced to the concept and rules for the group exam process as part of the syllabus review. Below is an example of the description provided in the syllabus:

Exams The exams will not be traditional exams. Rather, they will be group exams (3 to 4 in a group) that will ask you to reflect on the materials we have discussed over the course of the semester in your small group. Special attention will be paid to the application of materials to personal and professional situations. Each student will be allowed to contribute one page (front only) of typed (12 point font) or two pages (front side only) of handwritten notes. Your notes must cover the entire review guide. The notes must be turned in with the exam. It is strongly suggested that you meet outside of class time with your group to prepare your notes and review for the exam. It is not acceptable to use the “divide and conquer” approach to this exam. In other words, all students in your group are responsible for reviewing the entire content for each exam, and each question must be discussed by the entire group.

Helpful hints: Even though this is a “group exam” don't expect that it will be easy and require little preparation. The best preparation will be made by taking notes from your text and lecture throughout the course of the semester, and not by “cramming” the day before the exam.

Students were not required to take the exam in groups; however, they were strongly encouraged. In the last semester the class was taught only one student out of 100 chose to take any of the exams alone. Students submitted one exam for their group. The exam was graded, and the same grade is assigned to each member of the group.

Case Study 4: Skills Training: Individual and Family Intervention

Course Description: Skills Training: Individual and Family Interventions is a three-credit hour sophomore-level, skills based class. The class is required for all students in Human Development and Family Studies and also draws from students in Vocational Rehabilitation.

Students work in small groups to learn basic helping skills including listening, reflecting, gaining rapport, supporting, challenging and developing and working toward goals. Course assessment consists of a skill demonstration video and four multiple choice exams. The exams assess knowledge of theory and applied applications through case scenarios.

Implementation: The students take the exam twice—first individually and then with their pre-assigned work groups. To facilitate the exam students are given two scantron answer sheets and a test booklet. The students first take the test individually, marking their answers to the questions on an answer sheet and noting their responses in the test booklet. The individual exams are collected, and the students keep their test booklets for reference during the group portion of the exam. After all individual exams are collected, the students break into pre-determined, three-person study groups to take the group portion of the test. The students do not have to come to consensus on the answers and each student is responsible for his or her own scantron answer sheet. The groups are allowed 20 minutes to complete the group portion and turn in their exam answers. The third step of this process is going over the exam. Although the students have turned in their answer sheets, they keep their test booklets as the answers are given. As the questions are read by the instructor, the students are encouraged to state their group's answer. The class participation during this portion of the exam tends to be very energizing and affirming to the students, and also provides the instructor insight into areas that were difficult or unclear to the students for future exam development. After all of the answers are given, contested questions and answers are addressed in a class discussion. The instructor plays a facilitator role, with students who answered the question correctly sharing their thoughts and impressions with the class. Students are not allowed to change their answers during the question and answer period. After this process is completed the test question booklets are collected.

In scoring the exams, three points are given for each correct individual answer and one point for each correct group exam answer. For example, an exam with 25 questions would be worth 100 points. Each correct individual answer is worth three points and each group answer is worth one point.

Evaluating the Group Exam Process: Listening to Student Voices

Each instructor utilized formative evaluations during the semester to collect data on the group exam experience. All comments were anonymous and collected from students individually. Evaluations were collected at various times during the semester. In some cases, evaluations were completed following the exam, or during the next class period before exams had been returned, or at a date randomly selected over the course of the semester. Students were told that the instructor was interested in their thoughts and opinions on the group process and that this information was optional, but if provided, the feedback would be used to make changes in the current semester's exam process, or used in future

semesters. Students who took the exams as individuals were also asked to complete the questionnaire and to address their rationale for taking the exam as an individual.

Questions Posed

Examples of questions posed in the formative evaluations include:

- Why did you choose to take the exam in a group?
- Did you study together before the exam?
- Did you prepare your note sheet as an individual or together with others?
- In your group, did you use your partner's note sheet instead of your own to answer a question?
- How did you plan to take the exam (i.e. did you plan to divide up questions or did you plan to answer all questions together?)
- Do you prefer group exams to taking the exam as an individual? Why or why not?
- Have you ever had the option to take a group exam before? If so, how was it structured? Was it a positive or a negative experience?

Content analysis of student responses revealed five themes regarding the perceived advantages of group exams and two themes regarding the perceived disadvantage of group exams. The themes that emerged regarding the advantages of group exams related to exam preparation; reduced stress and anxiety; retention of knowledge and critical thinking; learning from others; and collaboration and exposure to new ideas. Disadvantages that were noted related to discomfort with the overall process and concerns regarding lack of familiarity with group members.

The themes that emerged from the student evaluation data support the notion that group exams are an effective tool for achieving the learning goals established by the authors of this study: increasing student learning; promoting social learning and development of group process skills; and providing an assessment process that is balanced and accommodates multiple learning styles.

The relationship between the themes and the authors' goals for group exams are discussed below. Representative student comments have been selected to illustrate and give voice to the students' experiences, both positive and negative, with the group exam process.

Increased Student Learning

Exam Preparation

Students reported a sense of obligation to their team members which motivated their exam preparation. This supports the notion of positive interdependence as a motivator in the academic setting (Jensen, Johnson et al., 2002).

“When you take a group exam, I tend to study more. I think this is because I don't want to let my group down by not knowing the information.”

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"It also helped being with a partner because I felt obligated to know the material."

"Meeting to study before the test helps us look at all the issues. We can look and find the questions we couldn't find by ourselves."

"I like group exams because it gives me better motivation to study by making me remember that it's not just my grade that will be affected."

Stress and Anxiety Reduction

Another positive by-product of the group exam process is a decrease in student anxiety (Hodges, 2004; Russo and Warren, 1999; Zimbardo et al., 2003). For some students, their test anxiety produces psychological blocks and therefore their knowledge is not accurately assessed (Graham and Graham, 1997). Although it has been reported that test anxiety varies by subject matter (Everson et al., 1993), reduction of test anxiety and stress was a significant benefit noted by all students in our study. Students noted that the exams were "enjoyable;" because they were less anxious they were able to actively engage in the exam as a learning activity.

"I think the group exams are an excellent idea. It causes less stress; it is actually enjoyable to take the test."

"Group exams to me are wonderful. I have horrible test anxiety and this helps me to stay calm. I also feel that the material is actually learned rather than memorized and spit out for the test and then forgotten --maybe because of the stress level not being as high."

"I thought the exam format was excellent because the atmosphere was relaxed, and instead of being nervous about the text, I took a fun approach and felt more confident."

"I liked working with other people. It didn't feel stressful because I knew that I knew all the material, but didn't feel pressured to where I'd forget everything."

"(I took the group exam because there is)...less pressure. It's difficult to remember every last think and it kinda worked like a puzzle, whatever I couldn't recall someone else did."

Retention of Knowledge and Critical Thinking

The role of group exams in increasing students' abilities to think critically about course content (Nelson, 1999; Shindler, 2004) and process course materials at a higher level (Shindler, 2004) has been noted by previous researchers. In our study, student comments supported the role of group exams in providing opportunities for critical thinking and problem solving. Students also noted that by discussing the materials with others they felt they had a better chance of retaining the information because they did not focus energies on memorizing materials, rather, they were able to focus their energies on discussing and thinking critically about course

materials. This supports the work of Bruffee (1993) that construction and maintenance of knowledge occurs by discussions among knowledgeable peers.

"I found our exam to be an effective tool to test our knowledge. We were able to tie in many different topics into one answer. I am glad to get a break from the memorization game played in the majority of my other classes."

"I really prefer having the group test. I think that I actually remember the information more when I take the group exam. I think on scantrons (multiple choice tests with bubble sheets) you just spit out information that you soon forget right after taking the test."

"By being able to discuss the questions, I feel that more information is retained."

"This was an excellent way to take an exam. I feel that I wasn't under pressure to know the exact definition of every term. This helped me by giving me a chance to retain the material after the exam and not memorizing just for the test."

"It was nice to discuss the questions and verbalize our ideas, which always seems to cement them as knowledge."

"I've always believed that by telling someone what you know or need to know helps you learn better and retain information longer."

(I prefer)..."group exams because it allows for critical thinking as opposed to memorizing information."

Additional support for the benefits of group exams may be provided by grade comparisons between the same class when a traditional final exam was offered and the final exam that was completed using the group exam process. Using data from the Textiles and Merchandising Class shows that students taking the group exam did, in fact, score higher on the final exam than students in past years that did not use the group exam process. The final exam grade for students using a group exam was 351.5/400 versus 328.8/400 and 339/400 in previous years. Exams can provide evidence of learning, and in a learning-centered classroom where students demonstrate competence by meeting set standards on exams (Bain, 2004), the fact that more students received higher grades may indeed support the notion that group exams enhance learning.

Promotion of Social Learning and Group Process Skills

Learning from Others

Group exams promote social learning and the development of group process skills. Discussing exam questions, explaining concepts and listening to multiple viewpoints enhance the learning of course content (Rao et al., 2002). Such activities were specifically mentioned by our students as benefits of group exams. This supports the role that group exams serve in promoting the discussion of ideas and requiring students to reflect on and justify responses

to exam questions with their peers (Hodges, 2004) and to negotiate differences of opinions in “stressful” situations (Zimbardo et al., 2003).

“Four heads is better than one. The more people means more knowledge, which I believe actually helps you learn more.”

“I prefer group exams because they help me to learn the material better because we are working through a problem. Since you are working together you are able to work through a problem together.”

“I really liked the exam format and getting to work with a partner. We could do cooperative learning and share our thoughts and knowledge with one another. We could even get a better insight on the information we learned in class from discussing the possible answers on the test.”

“I think the group exams are a good idea because in real life you will most likely have other people to turn to when you have a problem in your job. You get more input.”

“I love that groups were allowed. It is a good way for me to know only show what I know, but to also learn from others.”

“The group format also allowed us to rely on each student's strengths – we could help each other with wording, spelling, and format. I think we continued to learn during the exam because we explained course concepts better to each other.”

“I like them because my partner brings out things that I wouldn't otherwise think of, so I learn during the exam.”

“I think taking it in groups is very beneficial. If you forget something the others can help remember it. By doing it this way we are re-learning the material.”

“The more people the more knowledge you have. This means the better your answers and knowledge gain you have. Also, you can pull certain peoples strengths into the test.”

Collaboration and Exposure to New Ideas

The group exam is bidirectional process benefiting students who are knowledgeable in the content area as well as those who are struggling (Ewald, 2005). Students who have a good understanding of course materials can increase their understanding and grasp of course materials by explaining course materials or justifying their answers. Vygotsky's zone of proximal development proposes that learning is dynamic and can be enhanced by the provision of appropriate scaffolding provided through social interactions (Vygotsky, 1978). Peer interactions that occur during group exams serve as scaffolds enabling students to move from one level of thinking to the next. Group exams allow students to experience the positive benefits of social learning by sharing their own knowledge and listening to the perspective of others (Zimbardo et al., 2003).

“As a group you can brainstorm and come up w/a more defined answer.”

“It is easier to study in a group and 4 minds can collect and hold more information than one person.”

“Collaborating ideas allows for greater learning of ideas.”

“A team is always more effective.”

“Group exam is beneficial and enjoyable, because your group adds things that you might have missed.”

“Because we get more information pulled to create a better answer. I usually get a new perspective.”

“It helps to see how others feel as well.”

“It's an advantage to have differences of opinions.”

“Having people in your group with different values and opinions makes you think of more possibilities when answering the questions.”

Balanced Assessment and Accommodation of Multiple Learning Styles

Student comments did not specifically address the issue of balanced assessment and multiple learning styles. The ability of group exams to achieve these two goals is an embedded part of the process and may be less recognizable as a benefit to the students. Student comments regarding anxiety reduction and the benefits of learning from others may speak to the ability of group exams to address multiple learning styles. The ability to discuss and share ideas with others addresses the needs of individuals with varied learning styles and intelligences.

Disadvantages of Group Exams

Dissenting themes also emerged. Although dissenting opinions were infrequent, there were students who reported discomfort and unease with the group exam process. Significant anxiety was also noted regarding lack of comfort and knowledge of their group members. These concerns were unique to feedback solicited after the first exam in one class, and were not mentioned in subsequent evaluations over the course of the semester.

“I don't think the group exams are a good idea. I can't think well enough to take an exam when I am discussing the question with others.”

“I do not want the responsibility of someone's test score on my head and conversely – I do not trust my classmates enough to have my test scores be reliant on them.”

“I do not think we had enough time in our groups before the test. We didn't know who our groups were. I think we should have had at least a week or more.”

“I am not a fan of “group” stuff like group projects of test. It could be because of some past experiences but I would rather choose my group and at most just be me and maybe one other person.”

“To make sure we all meet with each other we should have a day the whole class goes to the library.”

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Students also provided useful feedback for improving exams in the future including having exams with two parts with one part being individually completed and scored and another part being completed and scored as a group. Indeed, this suggestion was incorporated into the Introduction to Helping Skills course and is reflected in the example given here. Other comments were in regards to logistics of the room including noise level and distance between groups. In particular, the challenges of group exams in an auditorium style classroom were noted by several students.

Summary

The results of this study provide additional support for the positive role of group exams in the higher education classroom. Positive outcomes suggested from analysis of student comments include increased student learning, promotion of social learning, and the development of group process skills. Student comments also support the benefit of an assessment process that was balanced and accommodated multiple learning styles. The advantages of the group exam appear to be consistent across discipline with students from child development, family studies, and textiles and merchandising reporting similar benefits of group exams, even though the content of the classes and the implementation of the group exam varied significantly.

Group exams are one tool instructors may wish to consider as part of a balanced classroom assessment process. The use of group exams may appear to be a dramatic shift from traditional methods utilized in the college classroom, yet, as we are encouraged to make the shift from traditional methods of teaching and increase our focus on learning and the development of skills and competencies, we would encourage other faculty members to consider group exams as a possible tool. Group exams may be of particular benefit in classrooms where students are exposed to challenging concepts for the first time, in large enrollment classes, and in programs where group process skills are valued. Group exams allow for active involvement in the learning process which can lead to better outcomes on a variety of measures linked to student success (Huba and Freed, 2000). Challenges facing instructors interested in group exams include logistics regarding room design and structure, encouraging reluctant students to participate in the process, and allowing time for group members to develop comfort and familiarity with each other.

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